

In the Claims:

Claim 1 (amended). An IGBT with PN insulation, comprising:

a low-doped semiconductor substrate of a first conductivity type;

all
a low-doped drift zone of the first conductivity type formed in said low-doped semiconductor substrate; and

a first highly doped well zone of the first conductivity type and a second highly doped well zone of a second conductivity type, opposite to the first conductivity type, successively disposed between said drift zone and said semiconductor substrate providing a PN insulation.

*as
could*
Claim 5 (amended). A method of manufacturing a well zone for an IGBT, which comprises manufacturing horizontal regions of a well zone of an IGBT according to claim 1 by one of implantation and diffusion, and manufacturing vertical regions of the well zones by performing at least two epitaxial steps with a subsequent process selected from the group consisting of implantation and diffusion.

Claim 6 (amended). A method of manufacturing a well zone for the IGBT according to claim 1, which comprises manufacturing horizontal regions of a well zone of an IGBT according to

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end
claim 1 by one of implantation and diffusion, and
manufacturing vertical regions of the well zones by etching
trenches and subsequently filling the trenches with doped
polycrystalline silicon and diffusing out.
